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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/966,553	09/27/2001	Stephen Jensen	7836/83303	4623

7590

02/28/2002

Welsh & Katz, Ltd.
Erik B. Flom
22nd Floor
120 South Riverside Plaza
Chicago, IL 60606

EXAMINER

PATEL, ISHWARBHAI B

ART UNIT

PAPER NUMBER

2827

DATE MAILED: 02/28/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/966,553

Applicant(s)

JENSEN, STEPHEN

Examiner

Ishwar B Patel

Art Unit

2827

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 February 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) 16-30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 10-15 and 31 is/are rejected.
- 7) ☒ Claim(s) 8 and 9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 September 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). 5.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of group I, a circuit board adapted to suppress electromagnetic interference, in Paper No. 4 is acknowledged. Though the ground for the traversal is persuasive, the examiner would like to maintain the restriction on different ground. The restriction is between the claims drawn to products, group I, claims 1-15 and claims drawn to methods, group II, claims 16-30.

The product can be made by different process; such as the ferrite containing medium can be applied by any other known method instead of screening.

During a telephone conversation with Eric B. Flom (41,021) on February 22, 2002 a provisional election was made with traverse to prosecute the invention of group I, an electronic subassembly comprising a printed wiring board, claims 1-15. Restriction of the species is withdrawn in view of the detail study showing the present claims reading on both the figures 7 and 8. Affirmation of this election must be made by applicant in replying to this office action. Claims 16-30 are withdrawn from further consideration by the examiner, 37 CFR 1.42(b), as being drawn to a non-elected invention.

Drawings

2. The drawings are objected to because:

(a) The figures are hand sketch and not complete, such as figure 5, which does to show the ferrite layer 18, completely.

(b) Many reference numeral used in the specification for various features, but are not shown in the figures, such as,

electronic component 30 or electrical leads 32, page 5, line 19,
side 38, column 5, line 29,
reference numerals 22, 50, 52, page 6, line 15-16,
reference numeral 54, page 7, line 6.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

3. The disclosure is objected to because of the following informalities:

(a) Figure 6, as described on page 11, line 21, does not seem correct. Figure 6, is a graph.

(b). Many reference numerals are used in the specification for various features, but are not shown in the figures (as described above). Such reference numeral should be removed from the specification if not shown in figures.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the

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art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claim 6, is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The applicant claims, "the ferrite layer **consists essentially** of a ferrite powder," but it is not clear how using a powder only can form a layer. The applicant is using a captivating layer 20, as described on page 7, line 6. Is the captivating layer a part of ferrite medium layer?

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

7. Claim 2 recites the limitation "the ferrite layer" in line1. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) The invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claim 1-3, 7, 11 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Carter et al., (US Patent 5,801,597, hereafter Carter).

Regarding claim 1 and 11, Carter discloses a circuit board adapted to suppress electromagnetic interference, the circuit board comprising:

an electrically conductive transmission layer defining a circuit pattern (strip line 701, see figure 7-8, column 3, line 50-55);

a ferrite-containing medium spaced from the electrically conductive transmission layer (portion 707 of EMI filter 702, see figure 8, column 3, line 50-52);

and an insulating layer, positioned between the transmission layer and the ferrite layer (PC board 700, see figure 8, column 3, line 40-65).

Regarding claim 2, Carter further discloses two regions, tunnel 708 and 709, see figure 8, column 3, line 60-65.

Regarding claim 3, Carter further discloses the ferrite layer is not connected to an electrically conductive material.

Regarding claim 7, Carter further discloses the insulating layer comprises a substrate for the transmission layer (PC board 700, see figure 8, column 3, line 40-65).

Regarding claim 15, Carter further discloses the insulating material as PC board (PC Boards are made of fiberglass or ceramic).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 4-5, 10,12,14, 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carter et al., (US Patent 5,801,597, hereafter Carter), as applied to claim 1 above.

Regarding claims 4, 5,14 and 31, though Carter does not disclose the ferrite layer further comprises a paint as claimed in claim 4 and an epoxy as claimed in claim 5, or adhesive that adheres the ferrite-containing medium to the circuit board as claimed in claim 14 and a ferrite layer comprising a ferrite powder as claimed in claim 31. Carter does disclose that it can be made of desired ferrite ceramic material and ceramic material in the form of paint or epoxy with adhesive and epoxy or adhesive with powder is known in the art. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the circuit board of Carter having ferrite containing layer comprising a paint as claimed in claim 4, ferrite containing layer comprising an epoxy as claimed in claim 5 and adhesive that adheres the ferrite-containing medium to the circuit board as claimed in claim 14, or a ferrite layer comprising a ferrite powder as claimed in claim 31, in order to have a circuit board with

electromagnetic interference suppressing layer occupying lesser space and also will be easier to apply using screen printing or any other method.

Regarding claim 10 and 12, the applicant is claiming a captivating layer that maintain ferrite layer on the circuit board. Though Carter does not disclose such captivating layer, it is apparent to provide a protective layer or coating, if the ferrite layer is too fragile or not strong enough to be retained on the board. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the circuit board of Carter with a captivating layer that maintain ferrite layer on the circuit board in order to protect the ferrite layer and to get the resultant long and reliable performance.

Regarding claim 13, the applicant is claiming the electromagnetic signal is an RF signal. Though, Carter does not explicitly disclose RF signal, EMI suppression and radiation suppression devices are used for high frequency signals creating more noise or interference or radiation hazard and RF signal is one of the signals requiring such suppression for reducing the disturbance in system or in the surrounding systems. Therefore, it would have been obvious to one having ordinary skill in the art at time the invention was made to have the signal of Carter, an RF signal and the device is used for suppressing the unwanted interference / radiation / noise in order to have better performance of the system.

Regarding claim 31, Carter discloses all the features of the claimed invention as shown and applied to claims 1 and 11 above including the ferrite layer comprising a ferrite powder as explained above.

Allowable Subject Matter

12. Claims 8 and 9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims as the particle size and the thickness and a loss factor as claimed in both the claims are not disclosed or taught in prior art alone or in combination.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Uchikoba et al., Langley et al., Craft et al., Cherniski et al., Parker, Norte et al., Ichikawa et al, discloses the circuit board similar to applicant's claimed invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ishwar B Patel whose telephone number is (703) 305 2617. The examiner can normally be reached on M-F (6:30 - 4) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave L Talbott can be reached on (703) 305⁵ 9883. The fax phone numbers


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for the organization where this application or proceeding is assigned are (703) 305 3431
for regular communications and (703) 305 7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or
proceeding should be directed to the receptionist whose telephone number is (703) 308
0956.

ibp
February 24, 2002


DAVID L. TALBOTT
PRIMARY EXAMINER
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